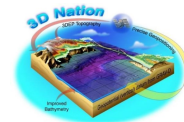
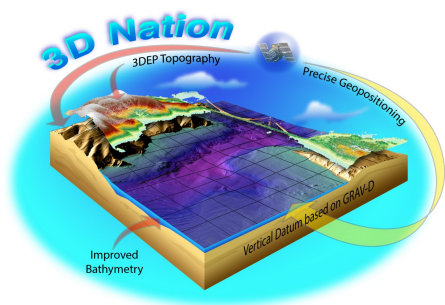


# 3D Nation Elevation Requirements and Benefits Study



**3D Nation Goal:** Continually improve the national elevation mapping foundation by coordinating the topographic, coastal, and bathymetric mapping activities across the Nation.



## What is 3D Nation?

3D Nation serves as a unifying structure for all national elevation efforts, and provides a consistent set of standards and objectives for an authoritative geospatial foundation to support national needs. The 3D Nation concept

provides the basis for mapping our natural resources, transportation systems, businesses, public and private lands, and ecosystems in a changing world by uniting terrestrial and coastal/ocean mapping efforts from the highest mountains to the deepest oceans to ensure public access to an accurate national elevation dataset.

## What is 3D Elevation Data?

**3D elevation data refers to:**

**Topographic data** - precise 3D measurements of the terrestrial terrain

**Bathymetric data** - 3D measurements of underwater depths and topography

## Why do we need to understand States' needs for 3D elevation data?

Critical decisions are made in every state across our Nation every day that depend on elevation data, ranging from immediate safety of life, property, and environment to long-term planning for infrastructure projects, and more. We use elevation data in agriculture to increase crop yields and reduce fertilizer runoff. We use it to manage catastrophes such as hurricanes and earthquakes, for storm surge warnings and flood events. We depend on it to manage our natural resources and plan ahead for sustainable use, protection, and enjoyment of our lands and seas. State participation in the 2012 National Enhanced Elevation Assessment (NEEA) was key to informing how the 3D Elevation Program (3DEP) could best respond to the rapidly growing need for high-quality elevation data to represent the land surface. Further, the NEEA study was helpful for state assessment and strategic planning related to elevation data.

Today we have the same questions for elevation data in our inland rivers, oceans, coasts, and Great Lakes. What are the needs for, and value of, accurate three-dimensional topographic and bathymetric mapping data to the nation? How can Federal mapping agencies better design their programs to meet existing and future needs for both datasets? How do we become a true 3D Nation that is economically competitive and environmentally sustainable?

The Interagency Working Group on Ocean and Coastal Mapping (IWG-OCM) and the 3D Elevation Program (3DEP) are working together to answer these questions with a new requirements and benefits study. Learning more about the business uses and associated benefits to be realized from improved 3D

elevation data will help us better direct federal mapping dollars to best meet many federal, state, and other national business needs.

## What is the 3D Nation Elevation Requirements and Benefits Study?

The 3D Nation Study will document and refine the requirements and benefits of the wide range of mission critical needs that depend on 3D elevation data to inform policy, regulation, scientific research, and management decisions. Such mission critical needs include flood risk management, natural resources conservation, infrastructure and transportation corridor improvements, identifying otherwise "hidden" geologic hazards, understanding water availability, safe maritime shipping and congestion avoidance, and updating nautical charts, among others.

The 3D Nation Study builds on the original NEEA to provide the ability to assess new acquisition technologies against user requirements and identify the tradeoffs between different approaches while simultaneously helping plan for the next round of 3DEP after nationwide coverage has been completed. Importantly the study adds our inland rivers, oceans, coasts, and Great Lakes to the equation.

## How can my State be part of the 3D Nation Study?

Help us to understand how much our Nation benefits from topographic and bathymetric elevation data, and how to design the next phase of federal elevation mapping programs to help meet State needs.

**Designate** a State Champion (if you are a coastal or Great Lakes state, you may want to select a Co-Champion to help address nearshore and offshore bathymetry requirements)

**Get to know** your USGS and/or NOAA liaison; they will be with you every step of the way, providing materials, outreaching to critical technical staff, drafting email and scheduling meetings, as needed

**Outreach** the study to State Agency leads, and encourage them to nominate study participants across Agency programs

**Review** participant list for representative inclusion of key and critical State business needs

**Add in** local, county, regional, Tribal, and academic study participants where they can help tell a more robust story about State needs

**Review** responses, and ensure critical State mandates and issues are fully represented

**Attend** the workshop or interviews and help lead discussion and bring consensus to the requirements for the State

**Write/Edit** an introductory narrative that will become part of the final publication (template will be provided)

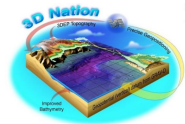
6 weeks

4 weeks

## Before Final Publication

**Give** your State summary the final approval before results are published

# 3D Nation Elevation Requirements and Benefits Study



## Who is sponsoring the 3D Nation Elevation Requirements and Benefits Study?

This study is sponsored by the National Oceanic and Atmospheric Administration (NOAA) Office of Coast Survey and the U.S. Geological Survey (USGS) National Geospatial Program as part of an effort to develop future program alternatives that would provide 3D elevation data to meet many federal, state, and other national business needs. The study will seek input from managers and data users from a variety of government entities as well as not-for-profit, academic, private, and commercial entities.

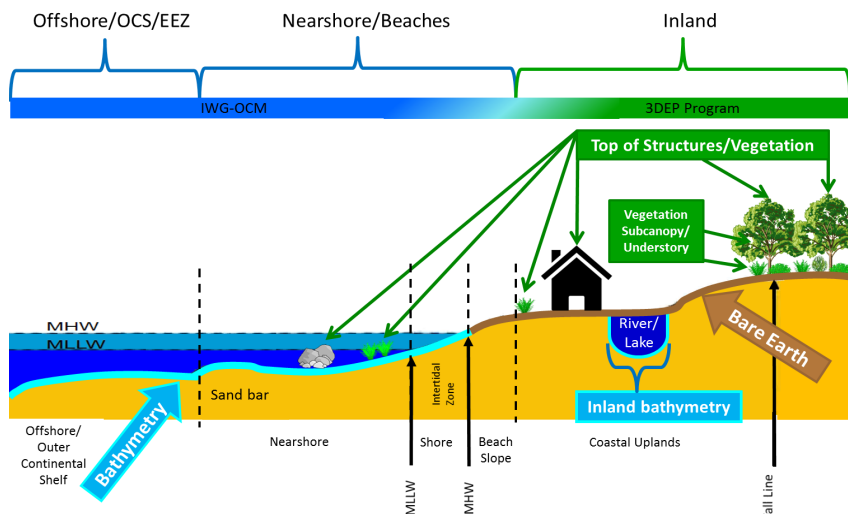
The findings are expected to establish national business needs and benefits for 3D elevation data and associated technologies that will enhance the responsiveness of NOAA, USGS, and other Federal agency mapping programs to meet stakeholder needs. The findings will also inform the design of future programs that balance requirements, costs, and benefits of 3D elevation data at a national scale.

### Funding Partners



## How is the 3D Nation Elevation Requirements and Benefits Study being conducted?

**Information Gathering Phase:** The first phase of the study that began in September 2017 is to comprehensively document and validate user requirements. Starting in the Winter of 2018, State Champions will be identified for States and territories to collect and summarize requirements and benefits information related to State use of 3D elevation data. The Champion's role is to ensure that their State's business needs for elevation data, as well as benefit information, are comprehensively represented and validated. A two-step process for each participating State includes an online questionnaire followed by a workshop or multiple interviews. The questionnaire will be used to gather the initial information, and state workshops and interviews will be used to refine the collected information. Concurrently with the state process, federal requirements for 3D elevation data will be gathered using the same questionnaire, interview/workshop, and validation processes. The analysis will include information from not-for-profits and selected industries.

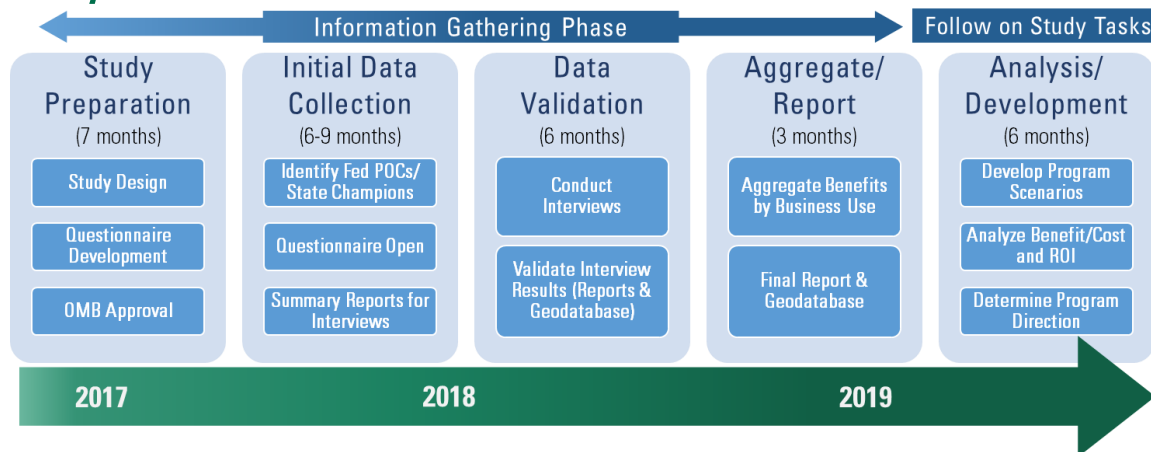


Topographic, coastal, & bathymetric 3D elevation data across a multitude of geographies.

### Follow on Study Tasks:

- Analyze the collected business use and benefits information to develop proposed standardized national dataset options that meet a majority of the business uses and to determine the cost and value of each option. The cost estimates for national data sets will take into consideration areas where suitable data already exist to meet requirements.
- Evaluate and compare alternative program scenarios based on their expected ability to produce the standardized national dataset options in terms of costs, risks, operational efficiency and other feasibility issues, using the infrastructure alternative best suited to the scenario being evaluated.
- The study is targeted for completion in 2019. The final report will be available to Federal and State agencies and other interested stakeholders.

## Study Timeline



### For more information:

#### Contact:

3DNationStudy@usgs.gov

#### Visit:

<https://communities.geoplatform.gov/ngda-elevation/3d-nation-study/>